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SHOE TAP PROTECTORS

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SHOE TAP PROTECTORS

Cross Reference to Related Applications

[0001] This application is a Continuation-in-Part Application of the following U.S. Patent Application: Utility Patent Application Serial Number 09/803,490, titled "Shoe Tap Protectors," filed on May 21, 2001. Utility Patent Application Serial Number 09/803,490 is herein incorporated by reference in its entirety.

[0002] This application claims the benefit of the following U.S. Provisional Patent Application: Provisional Patent Application Serial Number 60/450,963, titled "Shoe Tap Protectors," filed on February 28, 2003. Provisional Patent Application Serial Number 60/450,963 is herein incorporated by reference in its entirety.

[0003] This application claims the benefit of the following U.S. Provisional Patent Application: Provisional Patent Application Serial Number 60/466,136, filed on April 24, 2003. Provisional Patent Application Serial Number 60/466,136 is herein incorporated by reference in its entirety.

Field of Invention

[0004] This invention relates to shoe covers.

Background of the Invention

[0005] U.S. Patent No. 754,673 discloses an attachment for athletic shoes. U.S. Patent No. 754,673 is herein incorporated by reference in its entirety.

[0006] U.S. Patent No. 1,557,393 discloses an emergency sole. U.S. Patent No. 1,557,393 is herein incorporated by reference in its entirety.

[0007] U.S. Patent No. 2,205,344 discloses a tap dancing heel and toe attachment for shoes. U.S. Patent No. 2,205,344 is herein incorporated by reference in its entirety.

[0008] U.S. Patent No. 3,007,260 discloses dancing shoes, and sound-producing devices associated with such shoes, known as taps. U.S. Patent No. 3,007,260 is herein incorporated by reference in its entirety.

[0009] U.S. Patent No. 4,351,120 discloses a ski boot that is constructed with a relatively rigid bottom foot enclosure adapted to couple with a bottom traction component comprised of heel and sole portions. Traction components with traction surfaces have varying characteristics, dependent upon their intended use, and may be interchangeably installed on the boot through snap lock elements integral with the foot enclosure and traction components. U.S. Patent No. 4,351,120 is herein incorporated by reference in its entirety.

[0010] U.S. Patent No. 4,463,505 discloses a sole for footwear comprising an insole unit having an axially extending surface and a peripheral rib projecting downwardly from the surface for stitching the insole to the upper of the footwear, a midsole attached to the insole, the insole and midsole defining the top and bottom surfaces of a cavity, the cavity being bounded about its periphery by the rib, and an outsole attached to the midsole, and an orthotic element mounted in the cavity, the orthotic element comprising an axially extending flexible support layer. U.S. Patent No. 4,463,505 is herein incorporated by reference in its entirety.

[0011] U.S. Patent No. 4,587,746 discloses a metal shoe tap provided with a top thin flat horizontal member, a thin lip peripherally secured to said member and extending vertically downward to a bottom essentially horizontal edge, and a plurality of thin horizontally elongated plates, which are either parallel or perpendicular to each other. The plates are secured to each other, to the bottom surface of the member and to the lip and extend downward to lower edges, which are co-planar with the bottom edge of the lip. These plates define a plurality of generally rectangular cells open at the bottom and closed at the top with certain of said cells having an opening extending entirely through said thin flat horizontal member adapted for receiving a fastening member such

as a screw. U.S. Patent No. 4,587,746 is herein incorporated by reference in its entirety.

[0012] U.S. Patent No. 4,660,305 discloses a tap for attachment to a tap dancing shoe. The tap includes pickup means for converting the mechanical vibrational energy generated by the tap striking the floor into a substantially undistorted electrical signal suitable for remote processing and amplification. Also disclosed is a wireless radio transmission system adapted to be carried by a dancer using the shoe whereby the electrical signals picked up by the pickup means are transmitted to a remote receiver/amplifier unit. U.S. Patent No. 4,660,305 is herein incorporated by reference in its entirety.

[0013] U.S. Patent No. 5,001,852 discloses a pair of tap shoes each having toe and heel taps, associated with each tap is an audio-pickup transducer mounted one adjacent each tap, connected by signal-carrying wiring to a common electronic radio-wave transmitter and power-source mechanism that receives and sends the signal received from the respective transducers to a radio-wave receiver and amplifying and speaker mechanism spaced-away from the tap shoes such that tapping sounds of the taps on a hard surface are received, amplified and broadcast through speakers. U.S. Patent No. 5,001,852 is herein incorporated by reference in its entirety.

[0014] U.S. Patent No. 5,007,185 discloses a cleat cover for use on a bicycle shoe equipped with a pair of bicycle pedal engaging shoe cleats. The cleat cover is formed as an elastomeric shallow oval cup shaped housing for engaging, covering and protecting the front and rear cleats. The cup-shaped housing defines a parabolic toe portion cup for receiving the front cleat, and a rectangular heel portion cup for snugly receiving and covering the rear cleat. The cleats are enclosed and protected by the cover to adapt the bicycle shoe for temporary use as a walking shoe. U.S. Patent No. 5,007,185 is herein incorporated by reference in its entirety.

[0015] U.S. Patent No. 5,459,946 discloses a tap dance shoe and method for attaching a tap to a dance shoe, which includes securing a single T-nut in a fiberboard and then installing the combined T-nut and fiberboard assembly on the sole of the shoe. The shoe may have a preformed hole for receiving the T-nut. The fiberboard is attached to the sole by nailing, for example. The fiberboard has a fixture formed

thereon for positioning a tap relative to the sole of the shoe. The tap has a hole for aligning with the T-nut and also an engaging member for accommodating the fixture formed on the fiberboard. Once the fiberboard is secured to the sole, the tap is located on the fiberboard by mating the fixture with the engaging member of the tap. The tap is secured to the shoe and fiberboard by inserting a single screw into the single T-nut and tightening. Adhesive resin and a spring can be applied to a threaded portion of the screw to securely hold the tap on the sole of the shoe. U.S. Patent No. 5,459,946 is herein incorporated by reference in its entirety.

[0016] U.S. Patent No. 5,878,440 discloses a tap dance sound producing apparatus, which utilizes an attachment member and sound-producing members. The attachment member preferably comprises a sock having a ground-engaging surface. The sound producing members are preferably grommets, which reinforce openings in the ground, engaging surface of the sock. An attachment member is pulled onto each of a dancers feet and the sound producing members strike the ground as the dancer dances to produce a tap sound. U.S. Patent No. 5,878,440 is herein incorporated by reference in its entirety.

[0017] U.S. Patent No. 5,996,251 discloses an unusually versatile dance shoe usable for both jazz dancing as well as tap and character dancing combining the flexibility of a jazz dancing shoe and the support strength of a shoe used for character/tap dancing. This combination shoe has at a minimum a semi-flexible arch made of hard rubber, flexible inserts on the sides of the shoe upper above the arch and a hard leather sole and heel that can accept taps for tap dancing. The rubber arch is part of a continuous rubber layer that extends from and back over the leather hell and sole so that it is the whole length and width of the shoe. The dancer has the ability to achieve the aesthetic result from dancing flexibly such as by standing fully on pointe on the tip of the shoe or standing three-quarters on pointe while simultaneously having the support and strength necessary to tap dance and perform character dance steps such as stomping, kicking, scuffing, slamming and clicking. Versatility allows the optional attachment of taps and can therefore be used with or without taps. When taps are used, an extra rubber-equalizing layer can be added if desired. U.S. Patent No. 5,996,251 is herein incorporated by reference in its entirety.

[0018] U.S. Patent No. 6,092,306 discloses a tap shoe taps cover system for covering the tap of a tap-shoe to permit a wearer of tap shoes to walk more quietly. The tap shoe taps cover system includes heel and ball tap covers each with upper and lower faces, and an outer perimeter. The tap covers each have a plurality of resiliently deflectable retaining clips upwardly extending from the upper face of the respective tap cover. U.S. Patent No. 6,092,306 is herein incorporated by reference in its entirety.

[0019] U.S. Patent No. 6,151,800 discloses a stretch-on elastic removable cover for a tap dance shoe, which enables the shoe to be decoratively transformed in appearance. The cover, when snuggly fitted on the shoe, conforms to the shape of the shoe and conceals the shoe's upper. The cover is constructed to include an integral band which stretchably wraps under the shoe's arch, and an endless loop retaining wire partially contained within a curved sleeve integral to the forward or toe end of the cover and which encircles the perimeter of the shoe's toe tap. U.S. Patent No. 6,151,800 is herein incorporated by reference in its entirety.

Summary of the Invention

[0020] In one embodiment, there is disclosed an apparatus that includes a shoe having a tap; a tap cover adapted to be removably mounted to the tap, where the tap cover includes a first attachment mechanism, and where the tap includes a second attachment mechanism adapted to releasably connect to the first attachment mechanism.

[0021] In another embodiment, there is disclosed an apparatus that includes a shoe having a tap; a spacer mounted between the tap and the shoe; a tap cover adapted to be removably mounted to the spacer, where the tap cover includes a first attachment mechanism, and where the spacer includes a second attachment mechanism adapted to releasably connect to the first attachment mechanism.

Brief Description of the Drawings

[0022] Figure 1 is a side view of a shoe cover applied to a dancing shoe;

[0023] Figure 2 is a side view showing a shoe cover being applied to a dancing shoe;

[0024] Figure 3 is an exploded view showing a shoe cover;

[0025] Figure 4 is a perspective view showing a spacer plate of a shoe cover;

[0026] Figure 5 is an exploded view showing a shoe cover;

[0027] Figure 6 is a side view of a shoe cover applied to a dancing shoe;

[0028] Figure 7 is a view showing a frame for a shoe cover;

[0029] Figure 8 is a view of a spacer;

[0030] Figure 9 is a view of a shoe cover;

[0031] Figure 10 is a cross-sectional view of a shoe-cover apparatus;

[0032] Figure 11 is a partial cross-sectional view of a shoe-cover;

[0033] Figure 12 is a view of a frame;

[0034] Figure 13 is a view of a frame; and

[0035] Figure 14 is a cross-sectional view of a shoe-cover apparatus.

Detailed Description of the Drawings

[0036] In one embodiment, there is disclosed an apparatus including a shoe having taps on the toe and heel of said shoe, tap covers removably mounted on said taps, optional spacers mounted between said taps and said shoe, where the tap covers are removably connected to said taps, or optionally to said spacer. In another embodiment, said tap covers are formed with means to releasably attach said tap covers to said taps, or optionally to said spacers.

[0037] In another embodiment, there is disclosed removable tap covers which can quickly and easily be applied to prevent dirt and grime from accumulating in the taps when the dancer is walking about.

[0038] In another embodiment, there is disclosed removable tap covers, which can preclude the taps from scratching a floor when the dancer is walking about.

[0039] In another embodiment, there is disclosed removable tap covers, which can quickly and easily be removed to allow the full effect of the taps during dancing.

[0040] In another embodiment, there is disclosed removable tap covers for dancing shoes which can quickly and easily be placed on the taps to prevent accumulation of dirt and grime in the taps, yet which can quickly and easily be removed to allow the full effect of the taps for dancing.

[0041] In another embodiment, there is disclosed removable tap covers which can quickly and easily be attached to prevent a dancer from slipping when walking about, and/or to provide slip resistance.

[0042] In another embodiment, there is disclosed removable tap covers which can quickly and easily be attached to prevent a dancer from making excessive noise, for instance advanced performance, when walking about.

[0043] In another embodiment, there is disclosed a removable tap and removable tap covers to cover the removable tap, both of which can be quickly and easily attached and removed from a shoe.

[0044] In another embodiment, there is disclosed a permanently affixed tap and removable tap covers to cover the permanently affixed tap, where the tap covers can be quickly and easily attached and removed from the permanently affixed tap.

[0045] Referring now to Figure 1, dancing shoe 10 is shown having front and rear taps 12 and 36 mounted on toe 16 and heel 18 of shoe 10. Optional spacer 20 is inserted between tap 12 and sole 22 of shoe 10, and may be slightly smaller in area than tap 12 so as to provide spaces 26 and 28 adjacent to the edges of tap 12. Tap cover 24 may be composed of two or more layers; first layer 24, and optional additional layers 38 and 40, first layer 24 is formed with inwardly turned edges 30 and 32, and is releasably attached by inserting edges 30 and 32 into spaces 26 and 28. Tap cover inner layer 24 is formed of a polymer, for example a resilient plastic, so that it can flex to allow edges 30 and 32 to pass about tap 12 and to snap into spaces 26 and 28 to attach tap cover 24 to tap 12. Optional exterior layer 38 may be formed of a suitable polymer, which will not slip on smooth floors, but will provide a firm grip to prevent a dancer from sliding.

[0046] Tap cover 34 is releasably attachable to heel tap 36, in a similar manner as described for toe tap cover 24. If desired, additional layers 138 and 140 of material may be applied interior to and exterior to tap cover first layer 32.

[0047] Exterior layer 38 and/or exterior layer 138 may be formed of rubber or a relatively high friction polymer, for example, a rubber-polypropylene blend, to provide greater traction for tap covers 24 and 34, when the dancer is walking about. Interior layer 40 and interior layer 140 may be formed of a hard polymer, which will provide a

strong sharp tapping sound when the dancer is dancing with tap covers 24 and 34 attached.

[0048] In use, a dancer places tap cover 24 on toe tap 12 and presses the center of tap cover 24 inwardly. This causes the edges of tap cover 24 to spread, whereupon the dancer grasps edges 30 and 32 of tap cover 24 and pulls them about tap 12 until edges 30 and 32 can be inserted into spaces 26 and 28 between tap 12 and spacer plate 20. The dancer then releases tap cover 24, which resiliently springs into place and releasably attaches tap cover 24 to tap 12. Heel tap cover 34 may be attached to heel tap 36 in a similar manner. Thereafter, the dancer can walk about freely without concern for scratching the floor or getting dirt or grime into tap 12.

[0049] When the dancer is ready to dance, dancer simply presses the center of tap cover 24 inwardly, causing tap cover 24 to spread until the dancer can grasp edges 30 and 32 of tap cover 24 to remove tap cover 24. Thereafter, the dancer can dance and obtain the full effect of tap 12. Hell tap cover 34 can be removed in a similar manner.

[0050] Referring now to Figure 2, a close-up cross-sectional view of tap cover 24 is shown being attached to shoe 10. Tap 12 and spacer 20 are releasably attached to shoe with screw 202. Although only one screw (202) is shown, tap 12 and spacer 20 may be attached with a plurality of screws, for example, three. Screw 202 is received into threaded housing 204. Front edge 30 of tap cover 24 is shown inserted into space 26 at toe 16 of shoe 10. Tap cover 24 is shown with first layer 210, optional interior layer 40, interior to first layer 210; and exterior layer 38 exterior to first layer 210. Sole 22 of shoe 10 is shown attached to toe 16 by connectors 206, for example, nails or rivets. Rear edge 32 is adapted to be inserted into space 28 to attach cover 24 to shoe 10.

[0051] In another embodiment, Figure 3 shows spacer plate 320 formed with first tab 42 at one end and second tab 44 mounted on resilient arm 340 connected to lever 46, adjacent the other end. Tap cover 24 is formed with notch 48 at one end and loop member 50 projecting from tap cover 24, adjacent the opposite end. Heel tap cover (not shown) and heel spacer (not shown) can be similarly configured.

[0052] In use, the dancer inserts first tab 42 of spacer 20 into notch 48 of tap cover 24. Next the dancer presses inwardly on lever 46 to drive resilient arm 340 inward and

places loop member 50 over second tab 44. Finally, the dancer releases lever 46, which allows second tab 44 to enter loop member 50, and to releasably attach tap cover 24 to tap shoe 10. The dancer can then walk about freely without concern about scratching the floor or fouling tap 12. To remove tap cover 24, the dancer simply presses inwardly on lever 46 to drive second tab 44 out of engagement with loop member 50 and removes tap cover 24.

[0053] Referring now to Figure 4, another embodiment of spacer 20 is illustrated. Spacer 20 has first tab 42 at one end and second tab 44 adjacent another end. First hole 410 and second hole 412 are also illustrated. There may be provided additional holes to correspond with the number of screws used to attach the tap to the shoe, and/or to accommodate a locating pin on rear side of tap.

[0054] In another embodiment, Figure 5 shows spacer 20 and tap cover 24. Spacer 20 is formed with tab 52 projecting from one end thereof, and has recess 54 formed in another end. Tap cover 24 is formed with notch 56 adjacent one end, and is provided with one or more resilient latch members 58, on the opposite end. In use, the dancer inserts tab 52 into notch 56 and snaps latch members 58 into recess 54 of spacer 20 to releasably attach tap cover 24 to spacer 20. To remove tap cover 24, the dancer lifts on latch members 58 to cause them to withdraw from recess 54 and slips tab 52 out of notch 56; tap cover 24 is then separated from tap shoe 10.

[0055] In another embodiment, Figure 6 shows tap cover 24 having handle or button 58 attached to the exterior surface of tap cover 24 to facilitate applying and removing cover 24.

[0056] In another embodiment, Figure 7 shows the inner structure of tap cover 24 having framework 62 formed of rigid material, such as metal or plastic, extending across the interior of tap cover 24. Framework 62 is formed with a plurality of openings 64 which receive material 804 of tap cover 24 during the manufacturing process and serve to provide a stronger structure for tap cover 24.

[0057] In one embodiment, walls 802, clips 58, and notch 56 are connected to and a part of framework 62.

[0058] In another embodiment, Figure 8 shows spacer 920. Spacer 920 includes tab 952 and recess 954. Holes 956 and 958 are shown, which are adapted to receive a

screw to attach a tap to a shoe, or to receive a post on a tap for aligning the tap with the shoe. Additional holes can be provided in spacer 920 for additional screws or additional posts to orient tap. Optional openings 960 are shown in spacer 920, which may serve to conserve material, and/or to improve sound quality while dancing. A solid spacer could muffle and/or absorb dancing sounds.

[0059] In another embodiment, Figure 9 shows tap cover 1024, having flat bottom portion 1080 and wall portion 1082. Flat portion 1080 may be at an angle α 1084 from wall portion 1082 between about 60° to about 120°, or between about 75° and about 105°, or about 90°. Tap cover 1024 includes notch 1056 adapted to receive tab 952. Tap cover 1024 includes clips 1058, which are adapted to receive recess 954. Notch 1056 and clips 1058 are adapted to connect tap cover 1024 to spacer 920. Tap cover 1024 includes clip extension 1060 which is connected to clips 1058, and when depressed serves to move clips 1058 outwardly to attach or detach tap cover 1024 to spacer 920. Tap cover 1024 also includes frame 1090 made of a first material, for example, a hard polymer or a metal, where the remainder of tap cover 1024 is made of a second material, for example, a softer polymer. In one embodiment, frame 1090 also forms walls 1082, notch 1056, clips 1058, and clip extension 1060. On the opposite side of tap cover 1024 from that shown in Figure 9B, may be formed a pattern in softer second material to achieve traction.

[0060] In another embodiment, Figure 10 shows shoe 1100 having sole 1102, spacer 1104, tap 1106, and tap cover 1108. Tap 1106 and spacer 1104, are attached to sole 1102 by screw 1120, which is received into threaded housing 1122. Additional screws (not shown) and screw housings (not shown) may be provided to attach tap 1106 and spacer 1104 to sole 1102. Spacer 1104 is provided with first connector 1110 and third connector 1112. Tap cover 1108 is provided with second connector 1114 and fourth connector 1116. First connector 1110 of spacer 1104 is adapted to connect to second connector 1114 of cover 1108, and third connector 1112 of spacer 1104 is adapted to connect to fourth connector 1116 of cover 1108. First connector 1110, third connector 1112, second connector 1114, and fourth connector 1116, may be tabs, notches, buttons, clips, magnets, pins, nails, screws, nuts, holes, ridges, loops, hooks, rivets, springs, and other non-permanent means of attachment.

[0061] In use, first connector 1110 engages second connector 1114, and third connector 1112 engages fourth connector 1116 to removably attach cover 1108 to spacer 1104. Connection between first connector 1110 and second connector 1114 can be broken, and connection between third connector 1112 and fourth connector 1116 can be broken to remove cover 1108 from shoe 1100.

[0062] In one embodiment, shoe 1100 defines an interior of an apparatus, with sole 1102 exterior to shoe 1100; spacer 1104 exterior to sole 1102 and shoe 1100; tap 1106 exterior to spacer 1104, sole 1102, and shoe 1100; and cover 1108 exterior to tap 1106, spacer 1104, sole 1102, and shoe 1100.

[0063] In anther embodiment, tap 1106 is made of a first material having a first hardness. Suitable first materials include metals, ceramics, composites, and polymers. In another embodiment, cover 1108 is made of a second material, or a composite structure of a second and a third material.

[0064] Referring now to Figure 11, a partial view of cover 1108 is shown. Cover 1108 includes frame 1202, exterior layer 1204 exterior to frame 1202, and interior layer 1208 interior to frame 1202. Pattern 1206 is formed in exterior layer 1204 to provide improved friction between cover 1108 and a walking surface (not shown). Pattern 1206 may be, for example, a tread, etc.

[0065] In one embodiment, frame 1202 is made of a second material, for example, a metal, a polymer, a ceramic, or a composite. Exterior layer 1204 and pattern 1206 are made of a third material, for example, a polymer, a mixture of polymers, or a composite. Interior layer 1208 is made of a fourth material, for example, a metal, a polymer, a ceramic, or a composite.

[0066] In one embodiment, second material is polypropylene and third material is synthetic rubber.

[0067] In one embodiment, tap 1106 is made of a first material, which is harder than the third material used to make exterior layer 1204 and pattern 1206. Hardness may be measured, for example, by Durometer hardness, Mohs scale, Brinell hardness, Rockwell hardness, diamond pyramid hardness, Knoop hardness, and scleroscope hardness.

[0068] In another embodiment, first material is harder than fourth material, which is harder than second material, which is harder than third material.

[0069] In another embodiment, spacer 1104 may be made of a fifth material, for example, a metal, a polymer, a ceramic, or a composite.

[0070] In another embodiment, first material is harder than fourth material, which is harder than fifth material, which is harder than second material, which is harder than third material. In another embodiment, second and fifth materials have about the same hardness. In another embodiment, first and fourth materials have about the same hardness. In another embodiment, third and fourth materials have about the same hardness. In another embodiment, first material is harder than second material, which is harder than third material.

[0071] In one embodiment, suitable metals for first through fifth materials include ferrous materials, aluminum and its alloys, titanium and its alloys, copper and its alloys, tin and its alloys, zinc and its alloys, and magnesium and its alloys.

[0072] In another embodiment, suitable polymers for first through fifth materials include natural and synthetic polymers. Suitable polymers include thermoplastic and thermoset polymers, including elastomers, synthetic rubbers, homopolymers of ethylene, propylene, butadiene, styrene, and olefins, and copolymers of these materials; neoprene, styrene-butadiene copolymer, nylon, polyester, polyvinyl chloride, and other polymers as recited in Maeno, et al., U.S. Patent No. 4,971,726, or Lu et al., U.S. Patent Application No. 2003/002 1981, filed January 9, 2001, which is herein incorporated by reference in its entirety. (U.S. Patent No. 4,971,726 is herein incorporated by reference in its entirety.)

[0073] In anther embodiment, other suitable materials for first through fifth materials include composite materials, for instance a fibrous material in a polymer matrix; or ceramic materials.

[0074] In anther embodiment, suitable materials for first through fifth materials are disclosed in the Appendix attached to Provisional Patent Application Serial Number 60/450,963, which is herein incorporated by reference in its entirety.

[0075] In another embodiment, Figure 12 shows frame 1220 for a tap cover (not shown). Frame 1220 includes notch 1256, and includes clips 1258, to attach frame

1220 to a tap or a spacer (not shown). Frame 1220 also includes walls 1282, solid portions 1270, and holes 1260. Frame 1220 may be covered with a softer resilient material to form a tap cover.

[0076] In another embodiment, Figure 13 shows frame 1320 for a tap cover (not shown). Frame 1320 includes notch 1356, and includes clips 1358, to attach frame 1320 to a tap or a spacer (not shown). Frame 1320 also includes walls 1382, solid portions 1370, and holes 1360. Frame 1320 may be covered with a softer resilient material to form a tap cover.

[0077] In another embodiment, Figure 14 shows shoe 1400 having sole 1402, tap 1406, and tap cover 1408. Tap 1406 is attached to sole 1402 by screw 1420, which is received into threaded housing 1422. Additional screws (not shown) and screw housings (not shown) may be provided to attach tap 1406 to sole 1402. Tap 1406 is provided with first connector 1410 and third connector 1412. Tap cover 1408 is provided with second connector 1414 and fourth connector 1416. First connector 1410 of tap 1406 is adapted to connect to second connector 1414 of cover 1408, and third connector 1412 of tap 1406 is adapted to connect to fourth connector 1416 of cover 1408. First connector 1410, third connector 1412, second connector 1414, and fourth connector 1416, may be tabs, notches, buttons, clips, magnets, pins, nails, screws, nuts, holes, ridges, loops, hooks, rivets, springs, and other non-permanent means of attachment.

[0078] In another embodiment, there is disclosed an apparatus including a dancing shoe comprising a tap; a spacer mounted between said tap and said shoe; a tap cover adapted to be removably mounted to said spacer; wherein said tap cover comprises a first attachment mechanism; and wherein said spacer comprises a second attachment mechanism adapted to releasably connect to the first attachment mechanism.

[0079] In another embodiment, there is disclosed an apparatus wherein the tap comprises a first material having a first hardness; and said tap cover comprises a second material having a second hardness; wherein said first hardness is greater than said second hardness.

[0080] In another embodiment, there is disclosed an apparatus wherein the first attachment mechanism comprises a latch member resiliently mounted on a tap cover.

[0081] In another embodiment, there is disclosed an apparatus wherein said spacer has a tab projecting from one end thereof, and said tap cover is formed with a U-shaped member releasably engageable with said tab to releasably attach said tap cover to said shoe.

[0082] In another embodiment, there is disclosed an apparatus including a tap on at least one of a toe and a heel of said shoe; a spacer plate mounted between said tap and said shoe; a tap cover adapted to be removably mounted to said spacer; wherein said spacer comprises a resilient arm having a tab member attached thereto, and said tap cover comprises a receiving member adapted to releasably receive said tab member to releasably attach said tap cover to said spacer.

[0083] In another embodiment, there is disclosed an apparatus wherein said tap covers are formed with an additional layer applied to the exterior surface of said tap cover formed of a relatively high friction material.

[0084] In another embodiment, there is disclosed an apparatus wherein said tap covers are formed with an additional layer applied to the inner surface of said tap cover formed of a hard, rigid material.

[0085] In another embodiment, there is disclosed an apparatus wherein said tap covers are formed with a frame extending across the interior of said tap covers.

[0086] In another embodiment, there is disclosed an apparatus wherein said frame comprises a metal.

[0087] In another embodiment, there is disclosed an apparatus wherein said frame is formed with a plurality of openings to allow a polymer to flow into said openings during manufacture of said tap cover.

[0088] In another embodiment, there is disclosed an apparatus including a spacer mounted between said tap and said shoe, said spacer being slightly smaller than said tap to provide a space about the periphery of the spacer between said tap and said shoe, and said tap covers are formed with a connection mechanism insertable into said space to releasably attach said tap cover to said shoe.

[0089] In another embodiment, there is disclosed an apparatus wherein said tap cover comprises a resilient plastic.

[0090] In another embodiment, there is disclosed an apparatus wherein said spacer has a stud projecting from one end thereof, and said tap cover is formed with a U-shaped member releasably engageable with said stud to releasably attach said tap cover to said shoe.

[0091] In another embodiment, there is disclosed an apparatus wherein said spacer plate has a tab projecting from one end thereof, and said tap cover is formed with a loop member releasably engageable with said tab to releasably attach said tap cover to said shoe.

[0092] In another embodiment, there is disclosed an apparatus including a spacer plate mounted between said tap and said shoe, said spacer plate being slightly smaller than said tap to provide spaces about the periphery of the plate between said tap and said shoe, said tap cover is formed with means insertable into said spaces to releasably attach said tap cover to said tap, said spacer is formed with a resilient arm having a tab and lever member attached thereto, and said tap cover is formed with a U-shaped member releasably engageable with the tab by said arm to releasably attach said tap cover to said shoe.

[0093] In another embodiment, there is disclosed an apparatus wherein said tap cover is formed with an additional layer applied to the inner surface of said tap cover and comprises a hard, rigid material.

[0094] In another embodiment, there is disclosed an apparatus wherein said tap cover is formed with an additional layer applied to the exterior surface of said tap cover and formed of a soft material.

[0095] In another embodiment, there is disclosed an apparatus wherein said tap cover is formed with a rigid framework extending across the interior of said tap cover.

[0096] In another embodiment, there is disclosed an apparatus wherein said framework comprises a hard polymer, for example a polypropylene.

[0097] In another embodiment, there is disclosed an apparatus wherein said framework is formed with a plurality of openings to allow a soft polymer to flow into said openings during manufacture of said tap cover.

[0098] In another embodiment, there is disclosed an apparatus including a dancing shoe comprising an interior of the apparatus; a sole exterior to the shoe; a spacer

exterior to the sole, wherein the spacer comprises a first attachment mechanism; a tap exterior to the spacer; and a tap cover exterior to the tap, wherein the tap cover comprises a second attachment mechanism, and wherein the second attachment mechanism is adapted to releasably connect to the first attachment mechanism, so that the tap cover is releasably connected to the spacer.

[0099] In another embodiment, there is disclosed an apparatus wherein the tap comprises a first material having a first hardness, and the tap cover comprises a second material having a second hardness, wherein the first hardness is greater and/or harder than the second hardness.

[0100] In another embodiment, there is disclosed an apparatus wherein the tap cover further comprises a frame, where the frame comprises a third material, further wherein the third material has a third hardness, wherein the first hardness and the third hardness are greater and/or harder than the second hardness, and/or wherein the first hardness is greater and/or harder than the third hardness.

[0101] Obviously, numerous other variations and modifications can be made without departing from the spirit of the present invention. Therefore, it should be clearly understood that the forms of the present invention described above and shown in the figures of the accompanying drawing are illustrative only and are not intended to limit the scope of the present invention.